

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 2-4: Particular requirements for hand-held sanders and polishers other than disc type**

[IEC 62841-2-4:2014](https://standards.iteh.ai/catalog/standards/sist/70aaf80f-f3b5-4b36-a331-707001700170/iec-62841-2-4-2014)

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**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –
Partie 2-4: Exigences particulières pour les ponceuses et lustreuses portatives, autres que du type à disque**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS,
TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY –
SAFETY –**

**Part 2-4: Particular requirements for hand-held
sanders and polishers other than disc type**

FOREWORD

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International Standard IEC 62841-2-4 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/164/FDIS	116/178/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-4 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-4 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held sanders and polishers other than disc type.

Where a particular subclause of Part 1 is not mentioned in this Part 2-4, that subclause applies as far as reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

Subclauses, notes and figures which are additional to those in Part 1 are numbered starting from 101.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

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NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

The contents of the corrigendum of October 2015 have been included in this copy.

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 2-4: Particular requirements for hand-held sanders and polishers other than disc type

1 Scope

This clause of Part 1 is applicable, except as follows:

Addition:

This part of IEC 62841 applies to hand-held **sanders** and **polishers** with the exception of disc-type tools covered by IEC 62841-2-3.

Tools covered by this standard include but are not limited to **belt sanders**, **drum sanders** or **polishers**, **reciprocating sanders** or **polishers**, **orbital sanders** or **polishers**, and **random orbit sanders** or **polishers**.

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2 Normative references (standards.iteh.ai)

This clause of Part 1 is applicable. [IEC 62841-2-4:2014](#)

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3 Terms and definitions [656d67663ee0/iec-62841-2-4-2014](#)

This clause of Part 1 is applicable, except as follows:

Addition:

3.101 sander

tool intended to remove surface material using an abrasive medium

3.102 polisher

tool equipped with a disc or pad intended for polishing

3.103 belt sander

sander equipped with an endless abrasive belt

3.104 drum sander or polisher

sander or polisher equipped with a rotating cylindrical working surface, oriented either inline or at an angle with the motor axis

Note 1 to entry: **Drum polishers** are also known as burnishing machines.

Note 2 to entry: **Drum sanders** with a drum in line with the axis of the motor are also known as spindle sanders or inline sanders.

3.105**orbital sander or polisher**

sander or **polisher** equipped with a plate, which performs an orbital oscillating motion parallel to the work surface

Note 1 to entry: Orbital sanders or polishers are also known as oscillating sanders or polishers

3.106**random orbit sander or polisher**

sander or **polisher** equipped with a plate positioned eccentrically on the driving spindle which can rotate freely around its axis parallel to the work surface

3.107**reciprocating sander or polisher**

sander or **polisher** equipped with a plate which performs a reciprocating motion parallel to the work surface

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable, except as follows:

5.17 Addition:

The mass of the tool includes the dust extraction adapter, if any.

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

This clause of Part 1 is applicable, except as follows:

8.3 Addition:

For **belt sanders** and **drum sanders** and **polishers**, the direction of rotation shall be indicated on the tool by an arrow, raised or sunk, or by any other means no less visible and indelible.

8.14.1 Addition:

For **belt sanders and drum sanders**, the additional safety instructions as specified in 8.14.1.101 shall be given. This part may be printed separately from the “General Power Tool Safety Warnings”.

8.14.1.101 Belt sander and drum sander safety warnings

Hold the power tool by insulated gripping surfaces, because the sanding surface may contact its own cord. Cutting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

9 Protection against access to live parts

This clause of Part 1 is applicable.

10 Starting

This clause of Part 1 is applicable.

11 Input and current

This clause of Part 1 is applicable.

12 Heating

This clause of Part 1 is applicable.

13 Resistance to heat and fire

This clause of Part 1 is applicable.

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14 Moisture resistance

This clause of Part 1 is applicable.

15 Resistance to rusting

This clause of Part 1 is applicable.

16 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

17 Endurance

This clause of Part 1 is applicable, except as follows:

17.2 Replacement of the third paragraph, except for **belt sanders and drum sanders and polishers**:

Orbital sanders and polishers, random orbit sanders and polishers, and reciprocating sanders and polishers are operated for 24 h at a voltage equal to 1,1 times the highest rated voltage or 1,1 times the upper limit of the rated voltage range, and then for 24 h at a supply voltage equal to 0,9 times the lowest rated voltage or 0,9 times the lower limit of the rated voltage range. The 24 h of operation need not be continuous. If applicable, the tool is adjusted to the maximum attainable speed.

The tools are operated while the platen, fitted with abrasive paper in reverse position or a polishing bonnet as applicable, is resting under the weight of the tool on a steel plate. The abrasive paper should be replaced as required to avoid direct contact between platen and steel plate. These tools are only tested in the upright position where the platen is horizontal.

18 Abnormal operation

This clause of Part 1 is applicable, except as follows:

18.8 Table 4 Replacement:

Table 4 – Required performance levels

Type and purpose of SCF	Minimum Performance Level (PL)
Power switch – prevent unwanted switch-on for belt sanders, drum sanders and polishers	b
Power switch – prevent unwanted switch-on for random orbit sanders and polishers	a
Power switch – prevent unwanted switch-on for other sanders and polishers	Not an SCF
Power switch – provide desired switch-off for belt sanders, drum sanders and polishers and random orbit sanders and polishers	b
Power switch – provide desired switch-off for other sanders and polishers	Not an SCF
Provide desired direction of rotation for belt sanders, drum sanders and polishers	a
Any speed limiting device	Not an SCF
Prevent exceeding thermal limits as in Clause 18	a

19 Mechanical hazards

This clause of Part 1 is applicable, except as follows:

19.1 Replacement of the first paragraph:

Moving and dangerous parts other than the abrasive belt and belt rollers of **belt sanders** shall, as far as is compatible with the use and working of the tool, be so positioned or enclosed to provide adequate protection against personal injury. The requirements for the abrasive belt and belt rollers of **belt sanders** are specified in 19.1.101, 19.1.102 and 19.1.103.

19.1.101 Belt sanders shall be designed to minimise the risk due to the nip hazard from the roller closest to the operator without limiting the intended functionality of the tool.

Compliance is checked by the following tests 1 and 2.

- 1) An test rod with 8 mm diameter, applied parallel to the axis of the roller, shall not be able to enter the in-feed nip between the roller and the abrasive belt. As the rod is attempted to be inserted into this area, the abrasive belt shall not be displaced in any way that would allow the entry of the rod. See Figure 101.
- 2) The abrasive belt is removed. A steel ball with 7 mm diameter is placed all along the in-feed gap between the intended belt contact surface of the roller and the belt housing

enclosure with the tool turned upside down in the most unfavourable position, see Figure 102. The steel ball shall not move under its own weight into the gap between the roller and the belt housing beyond the line of complete passage as shown in Figure 102.

19.1.102 Belt sanders shall be designed to limit access to in-feed nip locations from roller(s) other than those closest to the operator without limiting the intended functionality of the tool.

In-feed nip locations are regarded to be located either

between the intended belt contact surface of the roller and the belt housing enclosure

or

between the intended belt contact surface of the roller and the abrasive belt.

Access shall be limited by either a) or b) as follows:

- a) The chain distance between any in-feed nip location and the closest point on a handle or grasping surface identified in accordance with 8.14.2 b) 6) shall be at least 100 mm.

Compliance is checked by measurement.

- a) If a stick-type auxiliary handle is mounted to the side with its axis perpendicular to the direction of movement of the abrasive belt, it shall be provided with a flange having a height not less than 12 mm above the grasping surface between the grasping area and the in-feed nip location.

Compliance is checked by inspection and by measurement.

19.1.103 The ends of rollers that extend past the edge of the intended belt contact surface shall be smooth and free of sharp edges.

Compliance is checked by inspection.

19.6 This subclause is not applicable.

20 Mechanical strength

This clause of Part 1 is applicable, except as follows:

20.5 This subclause is not applicable for **sanders** and **polishers** except for **belt sanders** and **drum sanders**.

21 Construction

This clause of Part 1 is applicable, except as follows:

21.18.1 *Addition:*

For **sanders** other than **belt sanders** and **drum sanders**, power switches other than momentary power switches are permitted.

21.30 This subclause is not applicable for **sanders** and **polishers** except for **belt sanders** and **drum sanders**.